PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in the Control of Torpedoes and the like.

I, ARCHIBALD MONTGOMERY LOW, Captain in His Majesty's Army, of Royal Flying Corps, Experimental Works, Feltham, in the County of Middlesex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to the control of torpedoes, aeroplanes, airships and other dirigible bodies, the object being to provide improved means for the automatic and wireless control of such bodies.

The invention consists in controlling means for torpedoes, aeroplanes and the like comprising a mechanical or electrical control, a gyroscopic member for automatically operating said control and wireless electric means for actuating said control when required.

The invention also comprises other details and arrangements hereinafter more particularly described.

The accompanying drawings illustrate one mode of carrying out the invention:—

Figure 1 is a more or less diagrammatic view illustrating a control member in accordance with the invention.

Figure 2 is a similar view illustrating a modified form of mechanism;

In carrying my invention into effect in one convenient manner as, for example, in its application to the control of a torpedo, aeroplane, airship or other controllable or dirigible body, I provide a disc *a* to which are secured the cords or the like *b* operating the rudder or other member to be controlled, the disc being connected to or formed with a worm wheel engaging a worm *c* adapted to be rotated by means of an electric motor *d*. In conjunction with this control member I provide a gyroscopic member *e* suitably controlled and having an extension *f* provided with a contact *g* normally resting upon a strip of insulation g^1 and with contacts g^2 adapted to co-operate with either of the contacts *h i*, according as the body moves out of its path in one direction or the other, the arrangement being such that if the body moves in one direction or the other, the contact *g* moves into contact with the conducting member *a* and the appropriate contact g^2 co-operates with either of the contacts *h i* so that the circuit of the motor is completed, and the electric motor *d* and consequently the disc *a* will be caused automatically to rotate in one direction or the other for the purpose of operating the rudder or other control member to correct for the deviation of the body from its course.

A similar control may be effected by wireless electric means by providing, for example, two solenoids *k l*, either of which may be adapted to act upon the gyroscopic member or its extension to move the same in one direction or the other in order to make similar contacts to those above described, according to the direction of control.

In a modification of this part of the invention shown in Figure 2, the gyroscopic member *e* is provided with a rigid extension f^1 which will act in the above manner when the gyroscopic control is to operate, and such extension may be hinged or otherwise movable so that by means of the solenoids k^1 l^1 it may be moved out of the path of the contacts *h i*, while an independent wireless arm or member *m* is provided and is adapted to be actuated by one or other of two solenoids (not shown) in order that the control may be effected by wireless electric means in the manner described with reference to Figure 1.

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The invention is not to be confined to the foregoing details as I may vary the method of controlling the electric circuit by the gyroscopic and wireless means and the method of effecting the control from the electric circuit as may be found most satisfactory in practice.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a torpedo, aeroplane or the like electric control mechanism, a gyroscopically controlled member adapted to close one or other of two circuits connected with the electric control and means in conjunction with said member adapted to be controlled by wireless electric means for closing one or other of said circuits, substantially as described.

2. In a torpedo or the like having control mechanism as claimed in Claim 1, providing the gyroscope member with a movable extension and providing an independent wirelessly controlled member, substantially as described.

3. In control apparatus for torpedoes and the like as claimed in Claim 1, the provision of solenoids controlled by wireless electric means for causing the gyroscope member to close one or other of said circuits, substantially as described.

4. In control apparatus for torpedoes and the like as claimed in Claim 2, the provision of solenoids for moving said independent member out of the path of the contacts and additional solenoids controlled by wireless electric means for controlling the wireless member, substantially as described.

5. Improved control mechanism for torpedoes, aeroplanes or the like, substantially as hereinbefore described and as illustrated by the accompanying drawings.

Dated this 12th day of March, 1918.

MARKS & CLERK.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1926.

[This Drawing is a reproduction of the Original on a reduced scale.]

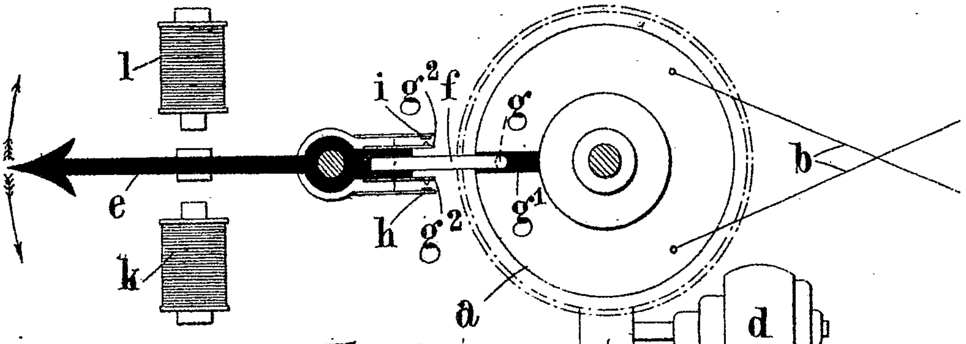

Fig. 1.

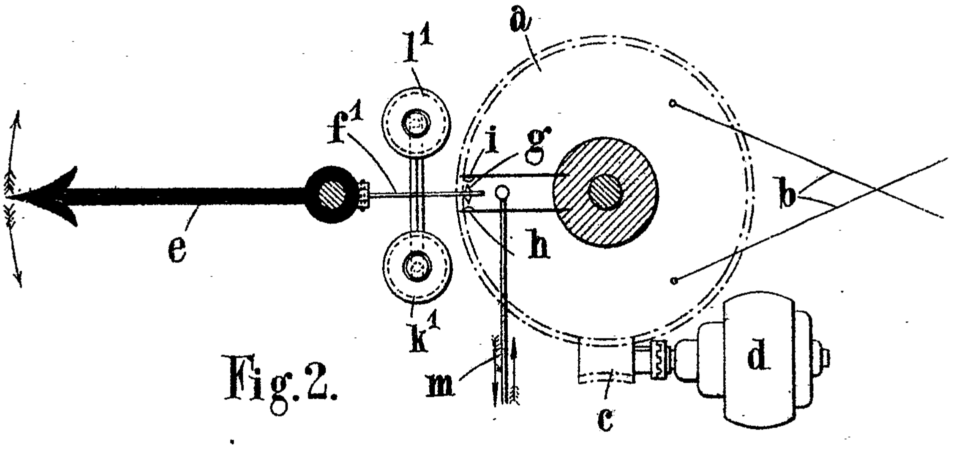

Fig. 2.

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